

Sequence Listing:

<110> CSL Ltd and The Council of the Queensland Institute of  
 Medical Research  
 <120> Expression of hydrophobic proteins  
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 <150> AU2002950183  
 <151> 2002-07-12  
 <160> 102  
 <170> PatentIn version 3.1  
  
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 Leu Ile Glu Leu Val Gln Pro Pro Gln Leu Thr Leu Gln Val Gly Leu  
 35 40 45  
 Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu Ala Gln Val Lys  
 50 55 60  
 Ile Glu Asp Pro Pro Phe Asn Ser Leu Tyr Leu Leu Glu Met Leu Trp  
 65 70 75 80  
 Arg Leu Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His  
 85 90 95  
 Glu Glu Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu  
 100 105 110  
 Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu  
 115 120 125  
 Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln Ala Lys Trp  
 130 135 140  
 Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg Leu Val Ser  
 145 150 155 160  
 Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln His Gly Met  
 165 170 175  
 Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu  
 180 185 190  
 Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe Thr Tyr Ser  
 195 200 205  
 Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val  
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 Glu Gly Gly Val Gly Trp Arg His Trp

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 Leu Ile Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg  
 35 40 45  
 Ala Glu Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Thr  
 50 55 60  
 Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met  
 65 70 75 80  
 Gly Val Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala Leu Tyr Leu  
 85 90 95  
 Gln Gln Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser  
 100 105 110  
 Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe  
 115 120 125  
 Met Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile  
 130 135 140  
 Phe Ile Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro  
 145 150 155 160  
 Leu His Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr  
 165 170 175  
 Trp Cys Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp  
 180 185 190  
 Phe Val Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly  
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			20					25					30		
Leu	Trp	Tyr	Gln	Leu	Arg	Pro	Gly	Gly	Lys	Lys	Lys	Tyr	Lys	Leu	Lys
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Tyr	Lys	Leu	Lys	His	Ile	Val	Trp	Thr	Trp	Glu	Thr	Trp	Trp	Thr	Glu
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Tyr	Trp	Glu	Ile	Lys	Asp	Thr	Lys	Glu	Ala	Leu	Lys	Arg	Trp	Ile	Ile
65					70					75					80
Leu	Gly	Leu	Asn	Lys	Lys	Leu	Trp	Val	Thr	Val	Tyr	Tyr	Gly	Val	Lys
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Ile	Glu	Glu	Leu	Arg	Gln	His	Leu	Met	Thr	Asn	Asn	Pro	Pro	Ile	Pro

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Val	Val	Thr	Leu	Trp	Gln	Arg	Pro	Leu	Val	Trp	Ala	Ser	Arg	Glu	Leu
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	130					135					140				
Thr	Ile	Pro	Ser	Ile	Ile	Tyr	Gln	Glu	Pro	Phe	Lys	Asn	Leu	Lys	Ser
145				150						155					160
Leu	Tyr	Asn	Thr	Val	Ala	Thr	Leu	Ala	Ile	Ile	Arg	Ile	Leu	Gln	Gln
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Leu	Ala	Ile	Phe	Gln	Ser	Ser	Met	Thr	Lys	Val	Ile	Tyr	Gln	Tyr	Met
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Asp	Asp	Leu	Leu	Val	Gly	Pro	Thr	Pro	Val	Asn	Ile	Thr	Pro	Gln	Asp
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Leu	Leu	Ala	Asp	Ala	Arg	Leu	Gly	Val	Arg	Ala	Thr	Arg	Lys	Gly	Val
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Ala	Gly	Ala	Leu	Val	Ala	Phe	Lys	Leu	Pro	Gly	Cys	Ser	Phe	Ser	Ile
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Phe	Arg	Met	Tyr	Val	Gly	Gly	Val	Glu	His	Arg	Val	Ala	Gly	Ala	Leu
65					70				75						80
Val	Ala	Phe	Lys	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Leu	Val	Leu	Ile	Phe
				85					90					95	
Cys	His	Ser	Lys	Lys	Lys	Ile	Leu	Ala	Gly	Tyr	Gly	Ala	Gly	Val	His
			100					105					110		
Met	Trp	Asn	Phe	Ile	Ser	Gly	Ile	Gln	Leu	Phe	Thr	Phe	Ser	Pro	Arg
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Arg	Val	Gly	Ile	Tyr	Leu	Leu	Pro	Asn	Arg	Phe	Trp	Ala	Lys	His	Met
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Trp	Asn	Phe	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp	Val	Leu	Ser	Ala	Phe

145									150									155									160
Ser	Leu	His	Ser	Tyr	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Tyr	Leu												
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Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Tyr	Leu	Val	Ala	Tyr	Gln	Ala	Thr												
				180					185					190													
Val	Arg	Leu	Ile	Val	Phe	Pro	Asp	Leu	Gly	Val	Thr	Leu	Gly	Phe	Gly												
		195					200					205															
Ala	Tyr	Met	Ser	Lys	Ile	Pro	Phe	Tyr	Gly	Lys	Ala	Ile	Val	Leu	Val												
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Gly	Gly	Val	Leu	Ala	Ala	Cys	Thr	Cys	Gly	Ser	Ser	Asp	Leu	Tyr													
225					230					235																	

Cys Leu Gly Gly Leu Leu Thr Met Val  
1 5

Gly Leu Cys Thr Leu Val Ala Met Leu  
1 5

Leu Leu Asp Phe Val Arg Phe Met Gly Val  
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Tyr Leu Leu Glu Met Leu Trp Arg Leu  
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Tyr Leu Gln Gln Asn Trp Trp Thr Leu

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Pro Tyr Leu Phe Trp Leu Ala Ala Ile  
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Arg Pro Pro Ile Phe Ile Arg Arg Leu  
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His Arg Cys Gln Ala Ile Arg Lys Lys  
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Arg Arg Ile Tyr Asp Leu Ile Glu Leu  
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Tyr Pro Leu His Glu Gln His Gly Met  
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Glu Gly Gly Val Gly Trp Arg His Trp  
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Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp  
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Ile Glu Asp Pro Pro Phe Asn Ser Leu  
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Ala Leu Leu Val Leu Tyr Ser Phe Ala  
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Arg Leu Arg Pro Gly Gly Lys Lys Lys  
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Lys Tyr Lys Leu Lys His Ile Val Trp  
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Met Thr Asn Asn Pro Pro Ile Pro Val  
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Val Thr Leu Trp Gln Arg Pro Leu Val  
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<213> Human immunodeficiency virus  
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Val Ile Tyr Gln Tyr Met Asp Asp Leu  
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Lys Leu Trp Val Thr Val Tyr Tyr Gly Val  
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Trp Met Asn Arg Leu Ile Ala Phe Ala  
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Leu Leu Phe Leu Leu Leu Ala Asp Ala  
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Arg Leu Gly Val Arg Ala Thr Arg Lys  
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Gln Leu Phe Thr Phe Ser Pro Arg Arg  
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Leu Ile Phe Cys His Ser Lys Lys Lys  
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Gly Val Ala Gly Ala Leu Val Ala Phe Lys  
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Val Ala Gly Ala Leu Val Ala Phe Lys  
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Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys  
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Leu Ser Ala Phe Ser Leu His Ser Tyr  
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Val Gly Ile Tyr Leu Leu Pro Asn Arg  
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Ile Pro Phe Tyr Gly Lys Ala Ile  
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35 40 45

Val Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu Ala  
50 55 60

Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Tyr Leu Leu Glu  
65 70 75 80

Met Leu Trp Arg Leu Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val  
85 90 95

Leu Leu His Glu Glu Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp  
100 105 110

Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser  
115 120 125

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Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln  
 130 135 140  
 Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg  
 145 150 155 160  
 Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln  
 165 170 175  
 His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly  
 180 185 190  
 Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe  
 195 200 205  
 Thr Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe  
 210 215 220  
 Met Gly Val Glu Gly Gly Val Gly Trp Arg His Trp His His His His  
 225 230 235 240

His His

<210> 95  
 <211> 242  
 <212> PRT  
 <213> epstein-barr virus (EBV)  
 <400> 95

Met Val Asp Phe Leu Arg Gly Arg Ala Tyr Gly Leu Pro Tyr Leu Phe  
 1 5 10 15  
 Trp Leu Ala Ala Ile His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg  
 20 25 30  
 Ile Tyr Asp Leu Ile Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu  
 35 40 45  
 Arg Leu Arg Ala Glu Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn  
 50 55 60  
 Ser Leu Thr Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val  
 65 70 75 80  
 Arg Phe Met Gly Val Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala  
 85 90 95  
 Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln  
 100 105 110  
 Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly  
 115 120 125  
 Pro Val Phe Met Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg  
 130 135 140  
 Pro Pro Ile Phe Ile Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly  
 145 150 155 160

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Trp Tyr Pro Leu His Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr  
 165 170 175  
 Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn  
 180 185 190  
 Leu Leu Asp Phe Val Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu  
 195 200 205  
 Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His Glu Glu  
 210 215 220  
 Ser Met Val Gln Pro Pro Gln Leu Thr Leu Gln Val His His His His  
 225 230 235 240  
 His His

<210> 96  
 <211> 669  
 <212> PRT  
 <213> epstein-barr virus (EBV)  
 <400> 96

Met Glu Asp Pro Gly Phe Phe Asn Val Glu Ile Pro Glu Phe Pro Phe  
 1 5 10 15  
 Tyr Pro Thr Cys Asn Val Cys Thr Ala Asp Val Asn Val Thr Ile Asn  
 20 25 30  
 Phe Asp Val Gly Gly Lys Lys His Gln Leu Asp Leu Asp Phe Gly Gln  
 35 40 45  
 Leu Thr Pro His Thr Lys Ala Val Tyr Gln Pro Arg Gly Ala Phe Gly  
 50 55 60  
 Gly Ser Glu Asn Ala Thr Asn Leu Phe Leu Leu Glu Leu Leu Gly Ala  
 65 70 75 80  
 Gly Glu Leu Ala Leu Thr Met Arg Ser Lys Lys Leu Pro Ile Asn Val  
 85 90 95  
 Thr Thr Gly Glu Glu Gln Gln Val Ser Leu Glu Ser Val Asp Val Tyr  
 100 105 110  
 Phe Gln Asp Val Phe Gly Thr Met Trp Cys His His Ala Glu Met Gln  
 115 120 125  
 Asn Pro Val Tyr Leu Ile Pro Glu Thr Val Pro Tyr Ile Lys Trp Asp  
 130 135 140  
 Asn Cys Asn Ser Thr Asn Ile Thr Ala Val Val Arg Ala Gln Gly Leu  
 145 150 155 160  
 Asp Val Thr Leu Pro Leu Ser Leu Pro Thr Ser Ala Gln Asp Ser Asn  
 165 170 175  
 Phe Ser Val Lys Thr Glu Met Leu Gly Asn Glu Ile Asp Ile Glu Cys  
 180 185 190

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Ile	Met	Glu	Asp	Gly	Glu	Ile	Ser	Gln	Val	Leu	Pro	Gly	Asp	Asn	Lys
		195					200					205			
Phe	Asn	Ile	Thr	Cys	Ser	Gly	Tyr	Glu	Ser	His	Val	Pro	Ser	Gly	Gly
	210					215					220				
Ile	Leu	Thr	Ser	Thr	Ser	Pro	Val	Ala	Thr	Pro	Ile	Pro	Gly	Thr	Gly
225					230					235					240
Tyr	Ala	Tyr	Ser	Leu	Arg	Leu	Thr	Pro	Arg	Pro	Val	Ser	Arg	Phe	Leu
				245					250					255	
Gly	Asn	Asn	Ser	Ile	Leu	Tyr	Val	Phe	Tyr	Ser	Gly	Asn	Gly	Pro	Lys
			260					265					270		
Ala	Ser	Gly	Gly	Asp	Tyr	Cys	Ile	Gln	Ser	Asn	Ile	Val	Phe	Ser	Asp
		275					280					285			
Glu	Ile	Pro	Ala	Ser	Gln	Asp	Met	Pro	Thr	Asn	Thr	Thr	Asp	Ile	Thr
	290					295					300				
Tyr	Val	Gly	Asp	Asn	Ala	Thr	Tyr	Ser	Val	Pro	Met	Val	Thr	Ser	Glu
305					310					315					320
Asp	Ala	Asn	Ser	Pro	Asn	Val	Thr	Val	Thr	Ala	Phe	Trp	Ala	Trp	Pro
				325					330					335	
Asn	Asn	Thr	Glu	Thr	Asp	Phe	Lys	Cys	Lys	Trp	Thr	Leu	Thr	Ser	Gly
			340					345					350		
Thr	Pro	Ser	Gly	Cys	Glu	Asn	Ile	Ser	Gly	Ala	Phe	Ala	Ser	Asn	Arg
		355					360					365			
Thr	Phe	Asp	Ile	Thr	Val	Ser	Gly	Leu	Gly	Thr	Ala	Pro	Lys	Thr	Leu
	370					375					380				
Ile	Ile	Thr	Arg	Thr	Ala	Thr	Asn	Ala	Thr	Thr	Thr	Thr	His	Lys	Val
385					390					395					400
Ile	Phe	Ser	Lys	Ala	Pro	Glu	Ser	Thr	Thr	Thr	Ser	Pro	Thr	Leu	Asn
				405					410					415	
Thr	Thr	Gly	Phe	Ala	Asp	Pro	Asn	Thr	Thr	Thr	Gly	Val	Asp	Phe	Leu
			420					425					430		
Arg	Gly	Arg	Ala	Tyr	Gly	Leu	Pro	Tyr	Leu	Phe	Trp	Leu	Ala	Ala	Ile
		435					440					445			
His	Arg	Cys	Gln	Ala	Ile	Arg	Lys	Lys	Arg	Arg	Ile	Tyr	Asp	Leu	Ile
	450					455					460				
Glu	Leu	Val	Gln	Pro	Pro	Gln	Leu	Thr	Leu	Gln	Val	Gly	Leu	Cys	Thr
465					470					475					480
Leu	Val	Ala	Met	Leu	Arg	Leu	Arg	Ala	Glu	Ala	Gln	Val	Lys	Ile	Glu
				485					490					495	
Asp	Pro	Pro	Phe	Asn	Ser	Leu	Tyr	Leu	Leu	Glu	Met	Leu	Trp	Arg	Leu
			500					505					510		

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Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His Glu Glu  
           515                                  520                                  525  
 Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu Arg Ala  
       530                                  535                                  540  
 Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys  
   545                                  550                                  555                                  560  
 Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln Ala Lys Trp Arg Leu  
                                   565                                  570                                  575  
 Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg Leu Val Ser Phe Ile  
                                   580                                  585                                  590  
 Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln His Gly Met Val Glu  
                                   595                                  600                                  605  
 Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu Thr Met  
       610                                  615                                  620  
 Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe Thr Tyr Ser Ala Gly  
   625                                  630                                  635                                  640  
 Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val Glu Gly  
                                   645                                  650                                  655  
 Gly Val Gly Trp Arg His Trp His His His His His His  
                                   660                                  665

<210> 97  
 <211> 669  
 <212> PRT  
 <213> epstein-barr virus (EBV)  
 <400> 97

Met Glu Asp Pro Gly Phe Phe Asn Val Glu Ile Pro Glu Phe Pro Phe  
   1                                  5                                  10                                  15  
 Tyr Pro Thr Cys Asn Val Cys Thr Ala Asp Val Asn Val Thr Ile Asn  
                                   20                                  25                                  30  
 Phe Asp Val Gly Gly Lys Lys His Gln Leu Asp Leu Asp Phe Gly Gln  
       35                                  40                                  45  
 Leu Thr Pro His Thr Lys Ala Val Tyr Gln Pro Arg Gly Ala Phe Gly  
   50                                  55                                  60  
 Gly Ser Glu Asn Ala Thr Asn Leu Phe Leu Leu Glu Leu Leu Gly Ala  
   65                                  70                                  75                                  80  
 Gly Glu Leu Ala Leu Thr Met Arg Ser Lys Lys Leu Pro Ile Asn Val  
                                   85                                  90                                  95  
 Thr Thr Gly Glu Glu Gln Gln Val Ser Leu Glu Ser Val Asp Val Tyr  
                                   100                                  105                                  110  
 Phe Gln Asp Val Phe Gly Thr Met Trp Cys His His Ala Glu Met Gln  
       115                                  120                                  125

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Asn	Pro	Val	Tyr	Leu	Ile	Pro	Glu	Thr	Val	Pro	Tyr	Ile	Lys	Trp	Asp
130						135					140				
Asn	Cys	Asn	Ser	Thr	Asn	Ile	Thr	Ala	Val	Val	Arg	Ala	Gln	Gly	Leu
145					150					155					160
Asp	Val	Thr	Leu	Pro	Leu	Ser	Leu	Pro	Thr	Ser	Ala	Gln	Asp	Ser	Asn
				165					170					175	
Phe	Ser	Val	Lys	Thr	Glu	Met	Leu	Gly	Asn	Glu	Ile	Asp	Ile	Glu	Cys
			180					185					190		
Ile	Met	Glu	Asp	Gly	Glu	Ile	Ser	Gln	Val	Leu	Pro	Gly	Asp	Asn	Lys
		195					200					205			
Phe	Asn	Ile	Thr	Cys	Ser	Gly	Tyr	Glu	Ser	His	Val	Pro	Ser	Gly	Gly
	210					215					220				
Ile	Leu	Thr	Ser	Thr	Ser	Pro	Val	Ala	Thr	Pro	Ile	Pro	Gly	Thr	Gly
225					230					235					240
Tyr	Ala	Tyr	Ser	Leu	Arg	Leu	Thr	Pro	Arg	Pro	Val	Ser	Arg	Phe	Leu
				245					250					255	
Gly	Asn	Asn	Ser	Ile	Leu	Tyr	Val	Phe	Tyr	Ser	Gly	Asn	Gly	Pro	Lys
			260					265					270		
Ala	Ser	Gly	Gly	Asp	Tyr	Cys	Ile	Gln	Ser	Asn	Ile	Val	Phe	Ser	Asp
		275					280					285			
Glu	Ile	Pro	Ala	Ser	Gln	Asp	Met	Pro	Thr	Asn	Thr	Thr	Asp	Ile	Thr
	290					295					300				
Tyr	Val	Gly	Asp	Asn	Ala	Thr	Tyr	Ser	Val	Pro	Met	Val	Thr	Ser	Glu
305					310					315					320
Asp	Ala	Asn	Ser	Pro	Asn	Val	Thr	Val	Thr	Ala	Phe	Trp	Ala	Trp	Pro
				325					330					335	
Asn	Asn	Thr	Glu	Thr	Asp	Phe	Lys	Cys	Lys	Trp	Thr	Leu	Thr	Ser	Gly
			340					345					350		
Thr	Pro	Ser	Gly	Cys	Glu	Asn	Ile	Ser	Gly	Ala	Phe	Ala	Ser	Asn	Arg
		355					360					365			
Thr	Phe	Asp	Ile	Thr	Val	Ser	Gly	Leu	Gly	Thr	Ala	Pro	Lys	Thr	Leu
	370					375					380				
Ile	Ile	Thr	Arg	Thr	Ala	Thr	Asn	Ala	Thr	Thr	Thr	Thr	His	Lys	Val
385					390					395					400
Ile	Phe	Ser	Lys	Ala	Pro	Glu	Ser	Thr	Thr	Thr	Ser	Pro	Thr	Leu	Asn
				405					410					415	
Thr	Thr	Gly	Phe	Ala	Asp	Pro	Asn	Thr	Thr	Thr	Gly	Val	Asp	Phe	Leu
			420					425					430		
Arg	Gly	Arg	Ala	Tyr	Gly	Leu	Pro	Tyr	Leu	Phe	Trp	Leu	Ala	Ala	Ile
		435					440					445			

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His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg Ile Tyr Asp Leu Ile  
 450 455 460  
 Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu  
 465 470 475 480  
 Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Thr Tyr Ser  
 485 490 495  
 Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val  
 500 505 510  
 Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala Leu Tyr Leu Gln Gln  
 515 520 525  
 Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys  
 530 535 540  
 Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys  
 545 550 555 560  
 Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile  
 565 570 575  
 Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His  
 580 585 590  
 Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys  
 595 600 605  
 Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val  
 610 615 620  
 Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly Gly Ser  
 625 630 635 640  
 Pro Thr Ala Met Ala Val Leu Leu His Glu Glu Ser Met Val Gln Pro  
 645 650 655  
 Pro Gln Leu Thr Leu Gln Val His His His His His His  
 660 665

<210> 98  
 <211> 187  
 <212> PRT  
 <213> epstein-barr virus (EBV)  
 <400> 98

Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile His Arg Cys Gln Ala  
 1 5 10 15  
 Ile Arg Lys Lys Cys Leu Gly Gly Leu Leu Thr Met Val Leu Thr Ala  
 20 25 30  
 Gly Phe Leu Ile Phe Leu Arg Leu Arg Ala Glu Ala Gln Val Lys Ile  
 35 40 45  
 Glu Asp Pro Pro Phe Asn Ser Leu Leu Leu Ser Ala Trp Ile Leu Thr  
 50 55 60



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Ala Arg Arg Arg Trp Arg Arg Leu Thr Val Pro Tyr Leu Phe Trp Leu  
 65 70 75 80  
 Ala Ala Ile Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly Gly  
 85 90 95  
 Ser Pro Thr Ala Met Val Met Ser Asn Thr Leu Leu Ser Ala Trp Ala  
 100 105 110  
 Leu Leu Val Leu Tyr Ser Phe Ala Arg Ala Lys Phe Lys Gln Leu Leu  
 115 120 125  
 Ile Ala Leu Tyr Leu Gln Gln Asn Trp Thr Tyr Gly Pro Val Phe Met  
 130 135 140  
 Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Tyr Leu Gln Gln Asn  
 145 150 155 160  
 Trp Trp Thr Leu Tyr Pro Leu His Glu Gln His Gly Met Cys Pro Leu  
 165 170 175  
 Ser Lys Ile Leu Leu His His His His His His  
 180 185

<210> 99  
 <211> 246  
 <212> PRT  
 <213> Human immunodeficiency virus  
 <400> 99

Ile Pro Ile Val Ala Ile Val Ala Leu Val Arg Leu Arg Pro Gly Gly  
 1 5 10 15  
 Lys Lys Lys Ile Leu Lys Glu Pro Val His Gly Val Pro Leu Val Lys  
 20 25 30  
 Leu Trp Tyr Gln Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys  
 35 40 45  
 Tyr Lys Leu Lys His Ile Val Trp Thr Trp Glu Thr Trp Trp Thr Glu  
 50 55 60  
 Tyr Trp Glu Ile Lys Asp Thr Lys Glu Ala Leu Lys Arg Trp Ile Ile  
 65 70 75 80  
 Leu Gly Leu Asn Lys Lys Leu Trp Val Thr Val Tyr Tyr Gly Val Lys  
 85 90 95  
 Ile Glu Glu Leu Arg Gln His Leu Met Thr Asn Asn Pro Pro Ile Pro  
 100 105 110  
 Val Val Thr Leu Trp Gln Arg Pro Leu Val Trp Ala Ser Arg Glu Leu  
 115 120 125  
 Glu Arg Phe Leu Leu Trp Lys Gly Glu Gly Ala Val Tyr Thr Ala Phe  
 130 135 140  
 Thr Ile Pro Ser Ile Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys Ser  
 145 150 155 160

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Leu Tyr Asn Thr Val Ala Thr Leu Ala Ile Ile Arg Ile Leu Gln Gln  
 165 170 175  
 Leu Ala Ile Phe Gln Ser Ser Met Thr Lys Val Ile Tyr Gln Tyr Met  
 180 185 190  
 Asp Asp Leu Leu Val Gly Pro Thr Pro Val Asn Ile Thr Pro Gln Asp  
 195 200 205  
 Leu Asn Thr Met Leu Tyr Leu Ala Trp Val Pro Ala His Lys Ala Leu  
 210 215 220  
 Val Glu Ile Cys Thr Glu Met Thr Leu Asn Ala Trp Val Lys Val Val  
 225 230 235 240  
 His His His His His His  
 245

<210> 100  
 <211> 246  
 <212> PRT  
 <213> Human immunodeficiency virus  
 <400> 100

Ile Leu Lys Glu Pro Val His Gly Val Lys Arg Trp Ile Ile Leu Gly  
 1 5 10 15  
 Leu Asn Lys Thr Leu Asn Ala Trp Val Lys Val Val Lys Ile Glu Glu  
 20 25 30  
 Leu Arg Gln His Leu Tyr Thr Ala Phe Thr Ile Pro Ser Ile Trp Ala  
 35 40 45  
 Ser Arg Glu Leu Glu Arg Phe Pro Leu Val Lys Leu Trp Tyr Gln Leu  
 50 55 60  
 Leu Val Gly Pro Thr Pro Val Asn Ile Ile Pro Ile Val Ala Ile Val  
 65 70 75 80  
 Ala Leu Val Ser Leu Tyr Asn Thr Val Ala Thr Leu Met Thr Asn Asn  
 85 90 95  
 Pro Pro Ile Pro Val Leu Leu Trp Lys Gly Glu Gly Ala Val Thr Trp  
 100 105 110  
 Glu Thr Trp Trp Thr Glu Tyr Trp Ala Ile Phe Gln Ser Ser Met Thr  
 115 120 125  
 Lys Arg Leu Arg Pro Gly Gly Lys Lys Lys Ala Leu Val Glu Ile Cys  
 130 135 140  
 Thr Glu Met Lys Leu Trp Val Thr Val Tyr Tyr Gly Val Tyr Leu Ala  
 145 150 155 160  
 Trp Val Pro Ala His Lys Ala Ile Ile Arg Ile Leu Gln Gln Leu Glu  
 165 170 175  
 Ile Lys Asp Thr Lys Glu Ala Leu Val Thr Leu Trp Gln Arg Pro Leu  
 180 185 190

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Val Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys Val Ile Tyr Gln Tyr  
 195 200 205  
 Met Asp Asp Leu Thr Pro Gln Asp Leu Asn Thr Met Leu Arg Pro Gly  
 210 215 220  
 Gly Lys Lys Lys Tyr Lys Leu Lys Tyr Lys Leu Lys His Ile Val Trp  
 225 230 235 240  
 His His His His His His  
 245

<210> 101  
 <211> 245  
 <212> PRT  
 <213> Hepatitis C virus  
 <400> 101

Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Lys Thr Ser Glu Arg Ser  
 1 5 10 15  
 Gln Pro Arg Phe Leu Leu Leu Ala Asp Ala Arg Val Leu Leu Phe Leu  
 20 25 30  
 Leu Leu Ala Asp Ala Arg Leu Gly Val Arg Ala Thr Arg Lys Gly Val  
 35 40 45  
 Ala Gly Ala Leu Val Ala Phe Lys Leu Pro Gly Cys Ser Phe Ser Ile  
 50 55 60  
 Phe Arg Met Tyr Val Gly Gly Val Glu His Arg Val Ala Gly Ala Leu  
 65 70 75 80  
 Val Ala Phe Lys Asp Leu Met Gly Tyr Ile Pro Leu Val Leu Ile Phe  
 85 90 95  
 Cys His Ser Lys Lys Lys Ile Leu Ala Gly Tyr Gly Ala Gly Val His  
 100 105 110  
 Met Trp Asn Phe Ile Ser Gly Ile Gln Leu Phe Thr Phe Ser Pro Arg  
 115 120 125  
 Arg Val Gly Ile Tyr Leu Leu Pro Asn Arg Phe Trp Ala Lys His Met  
 130 135 140  
 Trp Asn Phe Tyr Leu Val Thr Arg His Ala Asp Val Leu Ser Ala Phe  
 145 150 155 160  
 Ser Leu His Ser Tyr Trp Met Asn Arg Leu Ile Ala Phe Ala Tyr Leu  
 165 170 175  
 Leu Pro Arg Arg Gly Pro Arg Leu Tyr Leu Val Ala Tyr Gln Ala Thr  
 180 185 190  
 Val Arg Leu Ile Val Phe Pro Asp Leu Gly Val Thr Leu Gly Phe Gly  
 195 200 205  
 Ala Tyr Met Ser Lys Ile Pro Phe Tyr Gly Lys Ala Ile Val Leu Val  
 210 215 220

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Gly Gly Val Leu Ala Ala Cys Thr Cys Gly Ser Ser Asp Leu Tyr His  
 225 230 235 240

His His His His His  
 245

<210> 102  
 <211> 245  
 <212> PRT  
 <213> Hepatitis C virus  
 <400> 102

Tyr Leu Val Thr Arg His Ala Asp Val Trp Met Asn Arg Leu Ile Ala  
 1 5 10 15

Phe Ala Cys Thr Cys Gly Ser Ser Asp Leu Tyr Val Gly Ile Tyr Leu  
 20 25 30

Leu Pro Asn Arg Ile Leu Ala Gly Tyr Gly Ala Gly Val Leu Ile Phe  
 35 40 45

Cys His Ser Lys Lys Lys His Met Trp Asn Phe Ile Ser Gly Ile Phe  
 50 55 60

Leu Leu Leu Ala Asp Ala Arg Val Leu Leu Phe Leu Leu Leu Ala Asp  
 65 70 75 80

Ala Leu Ser Ala Phe Ser Leu His Ser Tyr Gly Val Ala Gly Ala Leu  
 85 90 95

Val Ala Phe Lys Lys Thr Ser Glu Arg Ser Gln Pro Arg Arg Leu Gly  
 100 105 110

Val Arg Ala Thr Arg Lys Asp Leu Met Gly Tyr Ile Pro Leu Val Val  
 115 120 125

Leu Val Gly Gly Val Leu Ala Ala Leu Leu Phe Asn Ile Leu Gly Gly  
 130 135 140

Trp Val Tyr Leu Val Ala Tyr Gln Ala Thr Val Tyr Leu Leu Pro Arg  
 145 150 155 160

Arg Gly Pro Arg Leu Phe Trp Ala Lys His Met Trp Asn Phe Gln Leu  
 165 170 175

Phe Thr Phe Ser Pro Arg Arg Leu Pro Gly Cys Ser Phe Ser Ile Phe  
 180 185 190

Ile Pro Phe Tyr Gly Lys Ala Ile Arg Met Tyr Val Gly Gly Val Glu  
 195 200 205

His Arg Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Arg Leu Ile Val  
 210 215 220

Phe Pro Asp Leu Gly Val Val Ala Gly Ala Leu Val Ala Phe Lys His  
 225 230 235 240

His His His His His  
 245